S 12th/13th St from Rowan St to W Kentucky St

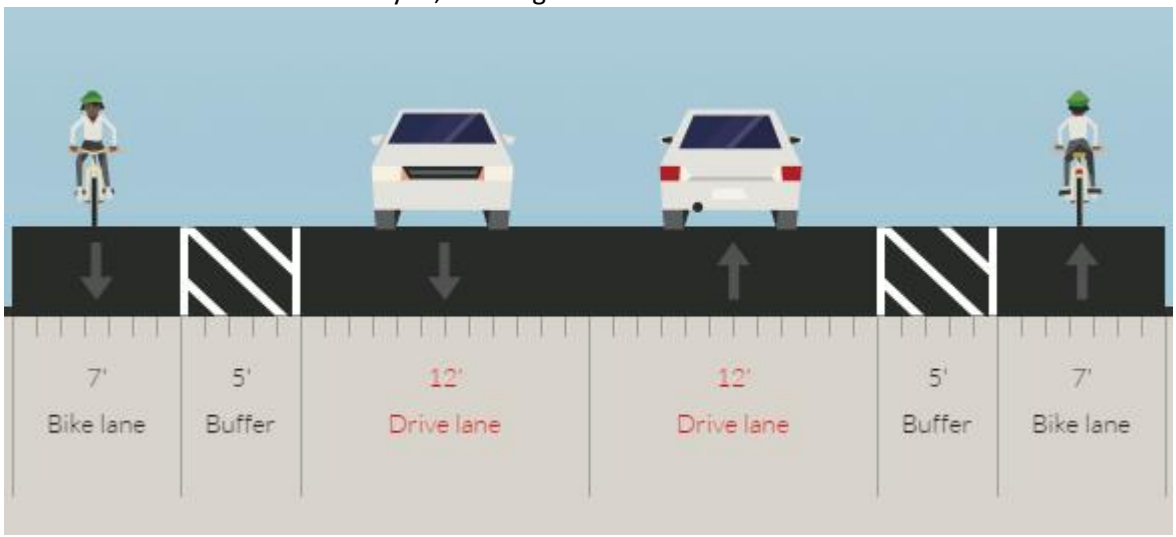
Project Purpose, Scope, Approach, Budget & Timeline

The purpose of this project is to improve the bicycle network along S 12th/13th Street between River Rd and W Kentucky Street by adding shared lane markings from Rowan Street to Market Street and reducing travel lanes between W Market Street and Kentucky Street to provide a buffered bike lane. The reconfigured cross-section improves safety for cyclists along the route and reduces the average vehicle speed within acceptable ranges of the posted speed limit. The excess pavement from the removed lane will be used to provide an additional buffer for cyclists by separating the bicycles from the vehicle travel lanes. This section of bike lane will improve connectivity by providing a direct link for cyclists between the River Walk multi-use trail and a future bike lane on Kentucky Street.

The changes to S 12th/13th St are as follows:

1. Between Rowan Street to Market Street
   Add shared lane markings in the travel lanes.

2. Between Market and W Kentucky St, reconfigure lane widths to accommodate a 5' buffer and 7' bike lane.



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To rate the success of this proposed project, a series of measures have been established that will provide a clear comparison between the pre-project and post-project traffic characteristics. The methods used to measure the effectiveness of this project have been detailed in this document and includes the following:

1. Collision study to determine the change in number and type of collisions
2. Speed studies to determine changes in prevailing speeds and percentage of drivers that are "excessive speeders" (10 mph or more above the posted speed limit)
3. Traffic counts and travel time studies to determine change in traffic volumes, lane utilization and traffic delays
4. Bike counts to determine change in ridership

Budget:

This project will be funded thru Mayor Greg Fischer's Urban Bike Network allocation established in the 2016 Fiscal Year budget. The design and engineering for this project is to be provided by the Departments of Public Works & Assets with assistance from Gresham, Smith & Partners.

Measurements of Effectiveness

1. Collision Reductions:

To determine the effectiveness of the roadway treatments in improving the collision rates, a comparison of the collision types occurring before and after the improvements will be conducted. The collision history for the last three years will be gathered through the Kentucky State Police's Collision Data website. Queries will be conducted in accordance with the *Collision Reporting Guideline* and the data obtained will be ranked by Manner of Collision and Directional Analysis. Each type of collision will then be converted to a specific collision type per vehicle mile traveled using the current traffic volumes for this section of roadway.

Upon completion of the road reconfiguration project, collisions within the boundary of the project will be evaluated monthly for the first 6 months in order to identify any immediate deficiencies. After the first 6 months, collisions will then be evaluated every 6 months for 3 years. Once the three years of collision history has been gathered, a comparison can be made between the pre- and post-project collision rates to determine effectiveness.

The road reconfiguration should show improvements in the number of sideswipe (same & opposite direction) and single vehicle collisions in which the vehicle left the roadway and collided with a fixed object. There should also be modest reductions in the rate of angle, opposing left turn and rear end collisions since the total number of conflicts will be reduced. There should also be no increase in the number of cyclist and pedestrian related collisions despite an increase in the total number of users.

Collision Analysis:

The collision history for this section of road was obtained through the Kentucky State Police's public crash analysis website. A query was conducted using the values listed in the attached collision report spreadsheet and the manner of collision was analyzed to determine the type of counter measure that would be best suited to reduce or eliminate each collision.

Collision History for 12th & 13th St corridor between 1/1/2012 to 8/1/2015
(Top 4 Collision Types)

Manner of Collision	Total # Collisions	Total # Injuries	Total # Correctable Collisions	Total # Correctable Injuries
ANGLE	24	20	6	4
SIDESWIPE – SAME DIRECTION	18	2	4	1
REAR END	17	8	4	2
SINGLE VEHICLE	14	9	3	2
Total Collisions	**63**			
Total Injuries		**39**		
Total # of Correctable Collisions			**17**	
Total # of Correctable Injuries				**9**

Cost Estimate: TBD

2. Traffic Volume, Speed & Travel Time:

To determine the effectiveness of the roadway treatments and its impact to the traffic flow and volumes, several pre- and post-project traffic counts and travel time studies will be conducted. Comparisons will be made between the before and after counts to determine the total change in traffic volume, the change in the average and 85th percentile speed, and the change in the travel time and delay for vehicles utilizing this section of road. The data gathered during the pre-project surveys will also be used to calibrate the traffic simulation models for the project corridor.

A travel time and delay study will be conducted in accordance with attached *Travel Time Study Guidelines*, and will be used to determine the impact the road reconfiguration has on the quality of traffic movement along the route.

Pre-project traffic counts -

Count 1:

Location: 12th/13th streets between Chestnut and Madison
Equipment: NC-300 Traffic Analyzer
Date: 9/9/2015
Data: This will be a traffic volume and speed count for 24 hours, with one counter in each lane of travel. This count will establish an Average Daily Traffic volume in each lane and the average and 85th percentile speeds.

Results:

North bound curb travel lane:
53 **ADT** with 42.50 **mph** 85th percentile
North bound center travel lane:
98 **ADT** with 24.78 **mph** 85th percentile
South bound curb travel lane:
7 **ADT** with **mph** 85th percentile
South bound center travel lane
304 **ADT** with 40.00 **mph** 85th percentile

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Bike lanes:

To determine the effectiveness of the bike lanes, counts will be conducted before and after the project. This before and after comparison will demonstrate the change in ridership associated with the dedicated bike lanes.

Mio-Vision or pneumatic tube counters will be placed at several locations to gather data on the total number of cyclists traveling in each direction in the corridor. Mio-Vision will be placed for 48 hours at each location while pneumatic tube counters will be placed at each location for about 1 week and during more favorable weather conditions. Additional bicycle counts can also be taken as part of the Mio-Vision turning movement counts conducted to determine traffic volumes at the intersections.

Pre-project bicycle counts

Count 1:

Location: 12th/13th streets between Chestnut and Madison
Equipment: Mio-Vision
Date: 9/1/2015

Results:

North bound travel lane: 7
South bound travel lane: 12

Post-project counts shall be conducted at the above locations several months after the completion of the project to compare the change in ridership along this section of road. Annual counts will be conducted and the data extracted will be used to establish trends in ridership along S 6th St. Data extracted from future counts will also be used in extrapolating the latent demand that may exist in other areas of the city to aid in the design of future road reconfiguration projects.